

ENVIS AIDS DOWNED AVIATORS

by Gene Adcock

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US Air Force pilots no longer have to grope around in the dark behind enemy lines - hoping to avoid capture - thanks to a night vision device developed by the Night Vision Equipment Company (NVEC) in Foglesville, Pennsylvania, USA. With ENVIS, the dark is a blessing.

The Evader's Night Vision Imaging System (ENVIS) was developed by NVEC more than ten years ago, but only recently came into its own, when it gained the widespread attention of combat aviation units operating in Iraq and Afghanistan. After years of testing - the ENVIS - a small, lightweight image intensified monocular is now part of the USAF Air Combat Command aircrew survival vest.

In April 1999, during a post rescue interview, VEGA-31¹ identified a deficiency that put the ENVIS on the fast track for qualification and certification. VEGA-31 identified the need for a night vision device that would allow an evader to safely move under a protective shroud of complete darkness.

The desired night vision capability would help to prevent inadvertent falling injuries and aid the circumnavigation of populated areas - thus avoiding capture. Additionally, there was the need for a magnetic compass module - for accurate overland navigation. And finally, there was a desire for a covert signaling capability. ENVIS has it all.

The VEGA-31 debriefing prompted a formal recommendation from the Nighthawk support squadron commander. In his letter, Colonel John Snider, 49th Operations Support Squadron, Holloman AFB, NM, recommended that the USAF Air Combat Command (ACC) adopt a night vision monocular for the combat aviator's survival vest. In the letter, Snider wrote: "This device would greatly increase the downed pilot's ability to assess the enemy threat, aid in the pilot's ability to evade the enemy at night, provide an additional covert directional signal, increase their chances of survival and improve their chances of rescue."

In early 2001, ACC contacted Mr. Richard Rousett, a Program Manager at the Systems Project Office (SPO), Air Force Material Command. He was told that ACC officials wanted the SPO to evaluate the multipurpose ENVIS produced by NVEC. The company claimed ENVIS was the only night vision device specifically designed to meet military's robust requirement for survival, evasion, resistance, and escape (SERE) operations. Additionally, NVEC had been working for years with Department of Defense organizations such as the Joint Personnel Recovery Agency, the Air Staff SERE and Life Support Directorates and others to qualify and certify ENVIS for the combat aviator.

Operating on two AA-batteries, the ENVIS is smaller than most survival radios. It weighs less than 15 ounces and incorporates both an internal infrared signaling capability and an optional compass module. ENVIS seemed the perfect fit, but the SPO had to prove it before it could legally fly in Air Force survival vests.

With the oversight of its Human Systems Program Office, the Air Force embarked on an evaluation program that spanned more than a year. Field tests were conducted with survival students, proving the ENVIS' capability to support an evader operating in a dark, hostile environment. Scores of tests were conducted with pilots operating in evasion scenarios at the Red Flag and Desert Rescue Exercises in Nevada.

Other tests included a successful sled ejection at Holloman AFB, NM to evaluate ENVIS' high-speed egress survivability. At about the same time, several parachute jumps - at the Edwards AFB flight test facility - proved ENVIS could withstand the rigors of parachute deployments and landings. All of these tests were conducted with the ENVIS stowed in the pocket of an approved survival vest.

Other laboratory tests included altitude chamber flights that proved ENVIS would not explode or implode when exposed to rapid decompression.

During the same period, a US Navy windblast (tunnel) test proved that exposure to high-speed (500mph) ejection did not affect the vest-stowed ENVIS. All of the preliminary tests and evaluations proved successful.

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The successful completion of the preliminary tests and evaluation led ACC to the issuance of an interim Safe-to-Fly letter and subsequent real-world test flights at Nellis AFB, Nevada. Over the next several months, ENVIS was flown in the survival vests of F-15 and F-16 pilots participating in combat training missions. More than one hundred missions were flown without incident. The successful completion of this final phase led to a recommendation for a final Safe-to-Fly Letter.

On January 21, 2003, the 311th Human Systems Wing (AFMC) sent to the Final Safe-to-Fly letter Air Combat Command. Within weeks, ACC issued guidance for installation of the ENVIS in SRU-21/P and Air Ace survival Vests.

Since January 2003, NVEC has delivered thousands of ENVIS to DoD combat aviation units. ENVIS saves have been reported; however, details remain classified.

ENVIS is identified by the American Defense Logistics Agency (DLA) as Part Number M-703E - National Stock Number (NSN) 5855-01-477-3241. Foreign military sales (FMS) sales and direct export sales are controlled by the US Department of State in accordance with the International Traffic in Arms Regulation (ITAR) per Title 22, Code of Federal Regulations (CFR) Parts 120-130. Visit <http://www.nvec-night-vision.com> for more information and technical specifications.

Note 1 – Identified only by his call sign - VEGA-31 - an F-117 Nighthawk pilot was headed home from a combat mission when his stealth aircraft was shot down in Kosovo on March 27, 1999. Details can be found on the www using search subject VEGA-31.

ABOUT THE AUTHOR - In April, 2002, GENE ADCOCK left full time employment as Vice President of Business Development, Night Vision Equipment Company, Allentown, Pennsylvania. Today, he is NVEC's Senior Military Consultant, operating at Fort Bragg and Pope Air Force Base, North Carolina.

He has Bachelors and Masters Degrees in Business Administration and Economics from Park College, Kansas City, Missouri and Webster University, St. Louis, Missouri.

A retired United States Air Force Chief Master Sergeant, he served four combat tours in South-East Asia during the Viet Nam War. His first tour was in Viet Nam as a Combat Controller supporting air-assault operations in the South. His last three tours were with the 1st Air Commando Wing, in Laos supporting air and ground interdiction missions along the Ho Chi Minh Trail and the Plaine de Jars. His combat decorations include: two Bronze Stars, six Air Medals, and six Air Force Outstanding Unit Awards with Combat "V", two Meritorious Service Medals and six Air Force Commendation Medals. A HALO qualified Master Parachutist he logged more than 300 static line and 100 HALO parachute jumps..

He is the author of ELECTRO-OPTICAL SURVEILLANCE DEVICES, an encyclopedia of night vision and thermal imaging devices.

